

STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

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Implementation of Restructuring)	
Legislation (Public Utilities)	
Code § 381, [AB 1890]): RD&D)	
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STRATEGIC PLAN REPORT ON
IMPLEMENTING THE RD&D PROVISIONS OF AB 1890
(MARCH 24 FINAL DRAFT)

Submitted to the California Energy Commission's RD&D Committee
Submitted by the Public Interest RD&D Advisory Group
Submitted on March 31, 1997

RD&D STRATEGIC PLAN REPORT

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CHAPTER I: INTRODUCTION

A. BACKGROUND CONCERNING THIS ADVISORY GROUP REPORT

On September 23, 1996, Governor Pete Wilson signed into law landmark legislation that will bring substantial competition to California's electricity industry. (Chapter 854, Statutes of 1996 (AB 1890)). With regard to energy-related research, development and demonstration (RD&D) activities, AB 1890 specifically requires the California Energy Commission (CEC or Commission) to fund certain public interest RD&D efforts that will advance science or technology not adequately provided by the competitive and regulated markets, pursuant to "administration and expenditure" criteria established by the Legislature. (Public Utilities Code Sections 381(a), 381(b)(2), 381(c)(2), and 381(f)). The California Public Utilities Commission (CPUC) is given responsibilities for other specified RD&D activities.

At an en banc hearing on October 16, 1996, the CEC determined that a plan would be developed for implementing the public interest RD&D provisions of AB 1890, and the Commission would also provide input to the Legislature regarding the appropriate administration and expenditure criteria for this RD&D program. The CEC then assigned these matters to its RD&D Committee with directions to (1) conduct collaborative, non adjudicatory, public hearings and workshops on these topics through May of 1997; and (2) prepare a proposed RD&D plan for the full Commission's consideration and adoption by mid-1997.

The RD&D Committee held its initial public hearing regarding these matters on December 2, 1996. Shortly thereafter, an ad hoc RD&D advisory group (group) was formed to prepare recommendations for the Committee on implementing the public interest RD&D provisions of AB 1890.

The advisory group held seven, day-long, public workshops throughout the state from December 17, 1996, through March 24, 1997, and updated the RD&D Committee regarding its work-in-progress at a public hearing held in

Sacramento on January 29, 1997. At that time the Committee also received recommendations from the group regarding appropriate "administration and expenditure" criteria for consideration by the Legislature.

The advisory group has now completed its **"Strategic Plan Report On Implementing The RD&D Provisions Of AB 1890"** (Strategic Plan Report or Report), and hereby submits that Report to the RD&D Committee for a public hearing presently scheduled on April 17, 1997. It is the group's understanding that following the hearing, the RD&D Committee will prepare its proposed Public Interest RD&D Strategic Plan for consideration and adoption by the full Commission early this summer. Actual implementation of the public interest RD&D program, in accordance with the Commission's Final Adopted Strategic Plan, is currently expected to begin on January 1, 1998, as called for in AB 1890.

B. DESCRIPTION OF THE ADVISORY GROUP PARTICIPANTS AND PROCESS

This ad hoc advisory group was open to anyone who wished to participate, and it began work shortly after the Commission's RD&D Committee held its initial hearing on implementing AB 1890 in December of 1996. Group participants represented a broad cross-section of entities concerned with California's energy-related public interest RD&D activities, including representatives from private sector companies, investor-owned and municipal utilities, state and federal research organizations, universities, public interest organizations, and various government agencies.

Numerous participants regularly attended advisory group workshops throughout the state (See Appendix A), and the group's mailing list contains almost 800 names. Approximately 40 separate parties are now official signatories to this advisory group report. (See Report Transmittal Letter to the RD&D Committee, dated March 31, 1997).

As noted above, the advisory group held seven day-long workshops between December 17, 1996, and March 24, 1997, and these workshops were conducted at various locations throughout the state (e.g. San Diego, Burbank, Ontario, San Francisco, Berkeley and Sacramento). Each workshop was publicly noticed well

in advance, both by traditional and by electronic publication means, and all workshops were open to anyone who wished to attend.

The advisory group members agreed to strive for consensus on key issues wherever possible, and to provide an accurate "sense of the group," including pros and cons of different options, when consensus could not be reached. (See Appendix B for complete summaries of all workshops). The RD&D Strategic Plan Report reflects the informative and constructive input which resulted from this four month long public process.

C. A BRIEF SUMMARY OF THE STRATEGIC PLAN CHAPTERS WHICH FOLLOW

After the advisory group reached agreement on its decision-making process, participants turned to the major RD&D Strategic Plan topics on which the Committee and Commission are seeking input. These topics are addressed in the following chapters of this Strategic Plan Report.

Chapter II first identifies the primary "Mission" and "Objectives" which the advisory group believes that California's energy-related public interest RD&D program (referred to herein as "Energy Research California" or "ERC") should seek to accomplish.¹ The Mission and Objectives contained in Chapter II are also intended to provide a fundamental framework for the "administration and expenditure" criteria which the Legislature is expected to adopt in August 1997. In essence, the group recommends that the ERC program be designed to further California's long-standing mission of providing environmentally sound, safe, reliable and affordable energy services and products to its citizens. This mission is to be achieved by focusing on specified RD&D activities, while implementing the ERC program in an efficient, merit-driven, and public manner.

Chapter III identifies the major substantive RD&D categories and

¹ The advisory group is aware of the fact that the initials "ERC" also stand for the Southern California Gas Company's "Energy Resource Center" in southern California. Therefore, in order to avoid confusion, the RD&D Committee may wish to chose a name other than "Energy Research California" for the public interest energy RD&D program authorized by AB 1890.

objectives on which the ERC program should focus. These focus areas include renewable energy, end-use energy efficiency, environmentally preferred advanced generation, and environmental research. The chapter also sets forth eligibility guidelines, selection criteria, and a selection process by which projects seeking funding from the ERC program can be evaluated.

Chapter IV outlines the means by which the ERC program should be governed. This chapter identifies various governing and/or administrative functions which must be addressed (e.g. policy input, project funding mechanisms, coordination, program evaluation, etc.), and then discusses the role of the governing structure and advisory groups in carrying out these various functions. The chapter ends by listing the major remaining steps which must be taken if the ERC program is to be operational on January 1, 1998, as AB 1890 and the advisory group itself intend.

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CHAPTER II: MISSION AND OBJECTIVES

A. BACKGROUND CONCERNING DEVELOPMENT OF THE MISSION AND OBJECTIVES

The RD&D advisory group (group) initially realized that two fundamentally different types of planning documents are needed to successfully implement California's energy-related public interest RD&D program, to wit: (1) a "Strategic Plan," which broadly describes the overriding "vision" and the general methods for implementing the RD&D provisions of AB 1890; and (2) an "Operational Plan," which subsequently provides the essential details needed to carry out the strategic document. Given the size of this advisory group, and the short timeframe for implementing AB 1890, the group is only able to make recommendations concerning the Strategic Plan itself; the operational plan(s) will have to be developed subsequently. ~~by those responsible for actually administering and implementing the energy-related public interest RD&D program. (The group labeled this public interest RD&D program "Energy Research California" or "ERC," and it will be so referred to throughout the remainder of this report).~~

With this orientation in mind, the group quickly reached a consensus on the need to identify the basic "Mission"² and an essential set of "Objectives"³ for the RD&D Strategic Plan. The group also agreed that its strategic statement of Mission and Objectives should be used as the fundamental framework for any "administration and expenditure" criteria which the Legislature subsequently adopts in implementing the RD&D provisions of AB

² The word "Mission" as used in this report means a broad-reaching general statement that provides guidance for the development of goals and objectives. It can be characterized as "where you want to go to" or "what you ultimately want to achieve."

³ The word "Objective" as used in this report means a statement of intent that leads to the attainment of the mission, but is not necessarily focussed or measurable.

1890.

In discussing and developing its recommended Mission and Objectives, the advisory group took note of both the **"Working Group Report On Public Interest RD&D Activities"** (submitted to the CPUC on September 6, 1996), and the many important ideas presented by a large number of RD&D experts who testified before the CEC's RD&D Committee during a day-long hearing on December 2, 1996. ~~(See Appendix 3 for a summary of the "Lessons Learned" from that Committee hearing).~~ Based on these outstanding background materials, and the extensive practical experience and knowledge of many of the individuals within the advisory group itself, the group decided that the Mission and Objectives for the Strategic Plan, and the Legislature's related "administration and expenditure" criteria, should identify the key "substantive" areas of program focus, as well as the major "process" objectives which the ERC program should achieve when being implemented.

A fundamental tenet reflected in the advisory group's recommended Mission and Objectives is the need for balance between competing imperatives, such as conducting a focussed yet flexible program, which is merit-driven and efficient but also responsive to public input and concerns. With this background in mind, we now turn to the Mission and Objectives recommended to both the Commission's RD&D Committee and to the Legislature.

B. MISSION AND OBJECTIVES FOR THIS PUBLIC INTEREST RD&D PROGRAM

The Mission and Objectives set forth below were developed as an integrated set of policies to provide direction for the ERC program. Thus, for example, while concepts included in the Mission statement are not specifically restated in the Objectives, all elements should be considered to be of equal importance in the Strategic Plan.

Moreover, in order to maintain California's national and international leadership role in the field of energy, the Legislature should embody the following Mission and Objectives in any "administration and expenditure criteria" which it may adopt when implementing the RD&D provisions of AB 1890.

MISSION: The mission of "Energy Research California" is to conduct public interest energy research that seeks to improve the quality of life for California's citizens by providing environmentally sound, safe, reliable and affordable energy services and products. "Public interest energy research" includes the full range of research, development and demonstration activities that will advance science or technology not adequately provided by competitive and regulated markets.

OBJECTIVES: The objectives of "Energy Research California" are to:

#1. Develop and implement a robust public interest RD&D portfolio of projects that addresses California's energy needs and primarily focuses on end-use energy efficiency, environmentally preferred advanced generation, renewable energy technologies, and environmental research.

#2. Create and maintain a public interest RD&D program that balances risks, timeframes and public benefits in a manner consistent with California's energy policies.

#3. Create a public interest RD&D knowledge base and disseminate information that will allow citizens, businesses, government and other entities to make informed decisions concerning energy technologies and services.

Option #4(A). Support public interest RD&D projects that are connected to the market by (a) assisting in the assessment of energy technologies and market needs; and (b) assisting in the transfer of technologies from RD&D into the marketplace.

Option #4(B). Support public interest RD&D projects that will foster: (a) the development of energy technologies and services which have the potential to be cost-competitive in an evolving deregulated electricity marketplace; and (b) the effective transfer of pre-commercial technologies and services into a competitive marketplace.

Option #4(C). Ensure the relevance of the project portfolio to the State's economy by (a) incorporating the assessment and understanding of market needs into appropriate phases of projects; (b) facilitating the transfer of ERC RD&D into the marketplace through partnerships; (c) collaborating with market and public-interest stakeholders to determine research needs; or (d) considering market needs during program planning.

#5. Ensure public input and accountability for the public interest RD&D program by: (a) conducting an open and flexible planning and decision-making process which involves stakeholders in both planning and implementing the program; (b) using advisory committees and expert panels to guide programs and evaluate project proposals; and (c) using an independent group for periodic overall program review and evaluation.

#6. Ensure the efficient administration and stewardship of public interest RD&D funds by: (a) implementing a streamlined project acquisition

and funding process; (b) using prescribed project evaluation criteria to select projects based on ~~technical~~ merit; (c) leveraging limited public interest RD&D funds through public/private partnerships to the extent possible; (d) managing projects flexibly and effectively; (e) establishing a personnel process which will attract and retain motivated individuals with technical knowledge; and (f) avoiding excessive overhead costs.

#7. Provide leadership and coherence for California's public interest RD&D efforts by: (a) coordinating with public and private RD&D entities; and (b) integrating this effort with the Energy Efficiency/Renewables programs and other public interest energy efforts.

C. ISSUES CONCERNING THE RECOMMENDED MISSION AND OBJECTIVES

While the advisory group held extensive and animated discussions during its "word-smithing" of the Mission and Objectives above, there was remarkable unanimity within the group on virtually all of the major points contained therein. ~~Only~~ Three of these Mission and Objectives issues warrant ~~any~~ further discussion in this report.

First, a few members of the group raised concerns about whether the Mission of the ERC program should focus exclusively on "electricity" as opposed to "energy" products and services, since electricity ratepayers alone are presently required to pay for the RD&D surcharge. While this "equity" concern was readily understood by the group, it was pointed out that many RD&D efforts often cut across energy lines, thereby impacting electricity users even when electricity *per se* is not the focus of the inquiry (e.g. RD&D concerning leaky air ducts can provide significant benefits for both natural gas and electricity customers). In keeping with its preference for granting reasonable flexibility to the ERC administrator wherever possible, the group decided to use the word "energy" rather than "electricity" in its recommended Mission statement.

Second, the group discussed whether the "efficiency" focus in Objective #1 should be limited to "end-use" efficiency only. It was noted that RD&D activities pertaining to "generation" efficiency may be viewed by some as more appropriate for the competitive sector to fund, particularly given the rapidly emerging deregulation of the generation market. However, other group members pointed out that not all areas of "generation" research

are competitive, and that many ongoing market failures continue to exist in the area of advanced generation. After considerable discussion, the group agreed that the ERC program should focus on both end-use energy efficiency and environmentally preferred advance generation, as well as renewable technologies and environmental issues.

Finally, the group could not quite bridge the word-smithing gap in its efforts to articulate Objective #4. The advisory group is concerned with insuring that public interest RD&D efforts are sufficiently "connected to the market" to avoid the so-called commercialization "Valley of Death," in which successful RD&D projects nevertheless fail to yield commercially useful products and services, thereby effectively wasting the RD&D funds which have already been expended. However, the group is also aware that public interest RD&D funds are extremely limited, and should not be used for near-term "commercialization" efforts which are better funded by other public interest programs (e.g. the Renewables and/or the Energy Efficiency programs) or by the private sector itself. In the end, three different versions of Objective #4 have been presented for the Commission's consideration, and each of these options seeks to address the "commercialization" balancing issue which is described above.

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CHAPTER III: RD&D FOCUS AREAS AND SELECTION PROCEDURES

A. INTRODUCTION

The Mission and Objectives discussed in Chapter II of this report are intended to provide overall guidance for implementing the ERC program. Chapter III provides further detail regarding the primary focus areas and objectives of the program, as well as the eligibility and selection criteria for evaluating specific proposals. Given the uncertain yet dynamic conditions brought about by deregulation and other factors, it is vital to build flexibility into the process so that the ERC portfolio can be responsive to changing "technology-push" and "market-pull" factors across the spectrum of public interest energy RD&D activities.

The advisory group (group) has identified four primary focus areas for the ERC program. These are listed in Objective #1 of Chapter II as end-use energy efficiency, environmentally preferred advanced generation, renewable technologies, and environmental research.

The **"Working Group Report on Public Interest Research, Development and Demonstration Activities,"** submitted to the CPUC on September 6, 1996, recommended three primary focus areas for the public interest RD&D program, to wit: energy efficiency, renewable technologies, and environmental research. This was the starting point for the advisory group's discussions regarding the proper focus areas for the ERC program. ~~However, the CPUC report did not make clear whether "energy efficiency" was limited to "end-use" efficiency or whether it also included RD&D activities for advanced generation as well.~~ As mentioned in Chapter II, above, the advisory group concluded that the ERC program should provide focus areas in both end-use energy efficiency and environmentally preferred advanced generation, as well

as in renewable technologies and environmental research. Chapter III expands on these topics by providing definitions, issues and objectives for each of the four focus areas.

The four focus areas listed below are intended to provide strategic guidance, and are not intended to define specific program structure. Possible ways of structuring the ERC programs include organizing by energy sectors, by types of solicitations, or by the selected focus areas. The program structure should be defined in the operational plan(s). ~~The ERC administrator(s), in coordination with advisory committees at both the policy and technical levels, should develop specific criteria for funding projects and activities in each of the focus areas.~~

In addition to the four focus areas listed below, some ERC funding should also be dedicated to **strategic energy** RD&D projects and activities. This strategic effort would include RD&D activities that cut across two or more of the focus areas, represent potential "orders of magnitude" advances, or provide energy-related public interest information assessments and/or innovations that do not fit within the other focus areas.

"Cross-cutting" strategic energy RD&D activities could include system-related projects such as distributed generation that utilize renewables, energy efficiency and environmental technologies in an integrated manner. Examples of strategic RD&D efforts that could provide "orders of magnitude" benefits include: (1) innovative projects and activities that result in "revolutionary" (versus "evolutionary") technological advances; (2) the development of "enabling" technologies, i.e. core concepts that create numerous opportunities for the development of subtechnologies, products and services; and/or (3) the development of "infratechnologies,"⁴ i.e. fundamental advances in integrated systems or processes (e.g. advanced metering) that pave the way for competitive development. Examples of topics which do not fit into any of the primary focus areas listed below include system reliability assessments and assessments of energy-related technology,

⁴ From "Challenge and Change in Collaborative Research", Ric Rudman and Peter Jaret, EPRI Journal, Jan./Feb.

market or institutional barriers.

Although strategic energy RD&D efforts often entail higher risks than do evolutionary RD&D efforts built on incremental advances, strategic efforts also generally provide higher and/or multiple benefits when they are successful. Thus, there is an important niche for these strategic projects in the ERC portfolio.

Objectives for strategic RD&D efforts include: (1) performing RD&D activities related to "strategic" energy technologies or services, as defined above; (2) obtaining information and performing assessments concerning strategic energy issues; and (3) supporting the strategic integration of new technologies or processes into California's energy system.

B. FOCUS AREAS AND OBJECTIVES FOR THE ERC PROGRAM

It was generally agreed that the focus areas and objectives for the ERC program should be framed broadly and at a high level to allow research providers and the ERC administrator(s) flexibility to pursue innovative concepts and research approaches. Below are descriptions of the four major areas for the ERC program, along with important issues and the objectives for each of these focus areas.

1. Renewable Energy Focus Area and Objectives

Definition: Renewable energy sources include solar radiation, geothermal brines and steam, biomass, water, and wind available for conversion to energy. Examples include photovoltaic systems; solar thermal generation and industrial process heat applications; wind turbines; hydropower; generation and direct-use utilization of geothermal resources; and generation or direct utilization through direct or indirect combustion or through conversion of fuels from anaerobic digestion, fermentation or other conversion of biomass residues and wastes to chemical and/or electrical energy. Hybridization of renewable technologies with fossil-fuel fired

energy to allow the renewable technologies to be more competitive in a deregulated market is acceptable within the definition of renewable energy.

Renewable energy provides public benefits such as energy diversity and security, improved environmental quality, increased benefits to local and regional economies, improved management of natural resources through the use of indigenous energy resources, and protection of public health and safety.

Issues: The primary issue confronting almost all renewable energy applications is how to compete in a deregulated energy market. Recognizing this dilemma, the Legislature established a \$540 million four-year fund under AB 1890 to help existing, new, and emerging renewables transition to a competitive market. However, there is also a need for RD&D to advance renewable technologies toward a cost-competitive stance. Therefore, one of the ERC focus areas is renewables. The ERC management should coordinate its renewable energy RD&D activities with the AB 1890 Renewables program in order to realize synergies between the two efforts, help establish the market connection for renewables emerging from RD&D, and to avoid unnecessary duplication.

Opportunities also exist for most renewable technologies to overcome critical technical barriers in the areas of reducing environmental impacts, increasing efficiency and tapping the benefits of system integration. ERC funding should be made available for these types of activities.

Objectives in the renewable energy focus area include:

- . RD&D concerning new technologies or approaches that enhance the technical proficiency and/or affordability of renewable energy resources;
- . Providing analytical tools and information to improve renewable energy products and services; and
- . Coordinating with other existing and emerging energy technologies or approaches to enhance the diversity and sustainability of California's energy resources.

2. End-Use Energy Efficiency Focus Area and Objectives

Definition: Improving end-use energy efficiency means to either ~~(a) increase the energy conversion efficiency of end-use technologies, products and services; or (b) reduce the energy consumption of end-use technologies, products and services.~~ (a) reduce the energy input requirements of end-use devices; or (b) achieve other improvements in the performance of end-use energy systems that reduce energy consumption. An example of ~~increasing energy conversion efficiency~~ reducing the energy input requirement of an end-use device would be to change the energy efficiency ratio (EER) of an air conditioner from 10 to 12. An example achieving other performance improvements would be adding insulation to a building, which has the combined effect of reducing the size of the air conditioner and the amount of energy it will take to make the building comfortable. ~~is an example of reducing energy consumption.~~

Another performance example would be to improve the energy efficiency training of commercial building operators.

Public benefits achievable in the end-use efficiency focus area include improved air quality, decreased use of fossil fuels, reduced expenditures on energy by consumers and increased statewide and regional economic benefits.

Issues: End-use energy efficiency RD&D activities generally address the potential for cost-effectively improving the performance of energy-consuming technologies, products ~~and~~ or services. In this context, it is important to understand the relationship between ~~higher efficiency choices that are competing for the customer's attention in the market place.~~ higher efficiency and other attributes that are competing for the end-user's attention. The success of energy-efficient innovations often depend on their ability to enhance other attributes of goods and services such as comfort or safety. In this context, RD&D on

consumer behavior can provide essential information.

Efforts to improve end-use energy efficiency are also often aided by synergistic approaches. For example, when the energy efficiency of a lighting system in a commercial building is improved, the need for air conditioning is also reduced. Therefore, a key end-use efficiency issue is to understand and learn how to exploit such synergies.

Another concern is how to more directly connect RD&D activities to the markets that will use the RD&D results. In this case, the ERC has a potentially valuable ally in the Energy Efficiency (EE) program established by AB 1890. This program, also using public purpose surcharge funds, will target market transformation activities associated with energy efficiency. The ERC can support RD&D to advance end-use energy information, products and services to the point where they become candidates for inclusion in the energy efficiency market transformation activities. Wherever possible, the ERC program should coordinate its end-use efficiency RD&D efforts with the energy efficiency market transformation activities, thus maximizing opportunities to improve the effectiveness of both programs.

Objectives: Objectives in the end-use energy efficiency focus area include:

- . RD&D concerning new technologies or approaches that will ~~increase the energy conversion efficiency of end-use technologies, products or services~~ reduce the energy input requirements of end-use devices;
- . RD&D concerning other improvements to technologies or approaches that will reduce the energy consumption of end-use technologies, products or services;
- . Providing analytical tools and information to improve the energy efficiency of end-use technologies, products or services; and

- Coordinating with other end-use energy efficiency programs and research providers to enhance California's end-use energy efficiency efforts.

3. Environmentally Preferred Advanced Generation Focus Area and Objectives

Definition: Environmentally preferred advanced generation is broadly defined ~~to include~~ as RD&D activities targeting the development of revolutionary, efficient electric generation technologies using clean ~~natural gas~~ fuels. RD&D efforts in this area should address improvements in generation efficiency and/or environmental performance. ~~and/or cost reductions.~~ Examples of generation systems in this focus area include, but are not limited to, new advanced cycles, fuel cells of all types, and next generation gas turbines.

Benefits from RD&D efforts in the environmentally preferred advanced generation focus area include ~~financial~~ cost savings and improved environmental quality.

Issues: The California Public Utilities Commission has stated that generation-related RD&D efforts should be provided by the competitive market. However, while the competitive market may provide support for those RD&D activities which provide adequate benefits for private-sector entities to capture, it will not provide adequate support for activities with primarily "public goods" attributes. For example, the competitive market may support near-term incremental improvements to commercially available generating products, but it is unlikely to provide adequate support for revolutionary RD&D efforts needed to make significant improvements in generating technologies or to develop advanced generating technologies. Support may be needed to enable some new advanced generating technologies to prepare for competitive participation in the restructured energy markets.

Objectives: Objectives in the environmentally preferred advanced generation focus area include:

- RD&D concerning technologies and processes that would improve the efficiency, cost, and environmental performance characteristics of environmentally preferred advanced generation technologies;
- Providing analytical tools and information to improve environmentally preferred advanced generation;
- Coordinating with other environmentally preferred advanced generation programs and research providers to enhance California's electric system.

4. Environmental Research Focus Area and Objectives

Definition: Energy production, delivery and use affects the quality of our air (both outside and indoors), the quality and availability of our water resources, the populations and habitat of aquatic and terrestrial wildlife and plants, our aesthetic response to the viewshed, the occurrence of hazardous material and toxic wastes, and our cultural and recreational resources. These impacts are usually difficult to quantify and to separate from non-energy influences.

The environmental efforts of ERC should aim at understanding, reducing, preventing, or mitigating the environmental impacts and costs of energy production, delivery and use in California, as well as exploring how new energy applications can solve environmental issues.

Issues: Whenever energy is extracted, collected, converted or utilized there are environmental impacts. The activities in this focus area should be directed at better understanding and reducing the impacts of those processes. One promising research angle is investigating how new technology applications can be developed to reduce emissions and retain industry in California. ~~For example, a furniture manufacturing firm in southern California~~

~~was in danger of having to leave the air basin due to unacceptable emissions from the conventional volatile finishes it applied to its products. Ratepayer funded research helped the industry design a finish that cured under UV light, resulting in lower emissions. This is the kind of innovative thinking that can help solve California's energy-related environmental challenges.~~

~~Specific environmental issues of energy production, delivery, and use for major energy technologies in California should be itemized in the operational plan(s).~~

Objectives in the environmental focus area should include:

- |. Determining and evaluating specific environmental issues related to energy production, delivery and/or use for major energy technologies in California;
- . conducting RD&D efforts concerning technologies and processes for understanding, reducing or preventing environmental impacts and related costs of energy production, delivery, and use;
- . Providing analytical tools and information to enhance environmental quality beyond current regulatory standards; and
- . Coordinating with other energy and environmental efforts to enhance California's overall environmental quality.

C. ELIGIBILITY AND SELECTION GUIDELINES

The eligibility and selection guidelines recommended below can be applied to all RD&D activities under consideration, across all focus areas, and regardless of whether projects are funded through solicited or unsolicited proposals. More specific eligibility and selection criteria will need to be developed through the operational plan(s).

1. Eligibility Guidelines

The eligibility guidelines should become the first level of screening for proposals submitted to the ERC program for funding consideration. At the end of this screening, an eligibility "go" or "no go" decision should be made; either a proposal is judged to be eligible for consideration or not. Projects which are not eligible will not require further expenditure of limited overhead funds. Following are the eligibility screening guidelines recommended for the ERC program:

- Projects must meet the statutory definition of public interest RD&D, i.e.---
 - Advances science or technology which provides benefits to California citizens; and
 - Is not adequately addressed by competitive and regulated markets.
- Projects must be consistent with the ERC Mission and Objectives.

2. Selection Guidelines

Once a proposal is judged to be eligible for ERC funding consideration, it should be reviewed and evaluated according to the following merit-based selection guidelines:

Public Benefits: Evaluate levels of public interest and private benefits compared with the proposal costs to be funded by the ERC and collaborative participants. Public benefits can include improvements to the quality of the environment, beneficial utilization of indigenous and /or renewable sources of energy, reduction in statewide energy and peak load requirements, increases in the overall efficiency of generation or end-use of energy, and positive impacts on the economies at the regional or statewide levels through e.g. consumer cost savings and creation of jobs.

Quality of Proposal: Determine the degree to which the proposal helps to advance the objectives of one or more of the ERC program focus areas. Evaluate the quality of the proposal to determine if the goals,

objectives and work statement represent technically viable means to resolve the major barriers. Evaluate whether the proposal describes the relationship of related RD&D efforts to ensure the proposal represents a synergistic approach without duplication of effort. Evaluate whether there is a realistic vision for transferring results of the proposal into the marketplace within a defined timeframe. Evaluate the size of the applicable niche and/or mass markets and gauge the likelihood for commercial success. Evaluate whether the budget and timeframe for the proposal are sufficient to achieve the desired results.

Quality of Research Team: Gauge the strength and viability of the proposer's team based on: (1) the knowledge, qualifications and experience of key individuals; (2) the team's past performance and financial stability; (3) the team's plans for, and track record of, transferring research results into the marketplace; (4) the plans for collaboration; and (5) the proposed level of cost-sharing.

Policy Consistency: Assess the technical, market and financial risks of the proposal and the likelihood of and timeframe for success. Weigh the results of these evaluations with the degree to which the proposal advances the objectives of one or more focus areas, and is consistent with State energy policy, to determine if the proposal fits into a balanced ERC portfolio.

Preferences: Evaluate preferences and other considerations (e.g. project and/or lead entity is located in California).

D. SELECTION PROCESS

The Strategic RD&D Plan should establish the overall ERC program direction through its focus areas and objectives. The merit-based selection guidelines should be the primary basis for project selection. Proposals should be evaluated for consistency with State energy and ERC policy. However, the Strategic Plan should not establish fixed percentages for focus areas or other specific measures of balance, recognizing that program balance will be established in relation to the actual portfolio of existing projects and incoming proposals.

Collaborative and/or cost-shared projects with public and

private partners are important to transfer technology and to help ensure the ERC has a lasting commercial benefit. These types of projects may need to offer the protection of intellectual property rights and patents to protect participants from the private sector.

The operational plan(s) should further guide the implementation of a balanced portfolio of projects. The specific criteria and sequence of the project selection process should be spelled out in the operational plan(s). This process should be reviewed and updated periodically.

While the ERC and its advisory and review committees should evaluate new proposals using the eligibility and selection guidelines adapted into a qualitative and quantitative evaluation framework, the selection process may be different for proposals to continue existing projects. The selection process should allow flexibility for the ERC and its advisory and review committees to exercise their best professional judgment to identify opportunities for collaboration, potential for cost-sharing, and options for exchange of results. The ERC and its advisory and review committees should attempt to maximize synergies among projects and proposals, while ensuring consistency with the ERC program's overall Mission and Objectives.

RD&D STRATEGIC PLAN REPORT

CHAPTER IV: GOVERNANCE OF ERC

A. OVERALL GOVERNANCE

The governance structure of ERC must be capable of effectively carrying out the Mission and Objectives of the organization. Therefore, the governance structure should be designed and streamlined to ensure public input and accountability, efficient administration and stewardship of resources (e.g. in contracting, personnel and budgeting), and statewide leadership for California's public interest RD&D efforts.

The ERC should also be able to perform a variety of program functions including technology and market assessments; overall management and review of the projects and program; coordination and collaboration with other research organizations and programs; and providing ~~guidance~~ support to its advisory and review committees.

B. ROLES AND FUNCTIONS OF ERC

In order to ensure that the public interest RD&D program will be effectively administered, the following roles and functions for the ERC are identified:

1. Policy Implementation - The ERC should provide input to the formulation of state energy policies relating to ERC's Mission and Objectives, with an emphasis on articulating the roles and benefits of public interest energy RD&D. The ERC should also be responsible for implementing state policies related to its Mission and Objectives.

2. Program Planning - ERC planning efforts should be undertaken at levels corresponding to its organizational structure and funding areas.

The ERC, with input from its advisory and review committees and interested stakeholders, should annually conduct a high-level update of both its strategic and operational plans. These update efforts should address the changing roles and needs of public interest RD&D.

The strategic plan ~~update~~ should provide broad outlines of the appropriate areas of RD&D focus, including new focus areas analogous to the descriptions of RD&D areas and objectives contained in the initial ERC strategic plan. The strategic plan should explicitly recognize the status and anticipated role of ongoing multi-year research ~~endeavors~~ activities versus new projects within the larger scope of the ERC program.

A second, more specific layer of planning will be conducted as part of the ERC operational plan(s). ~~update~~. The operational plan(s) ~~update~~ will be prepared by ERC's staff, with advice from the ERC's advisory and review committees. The operational plan(s) ~~update~~ should, among other things, include decisions concerning the continuation of the ERC's multi-year research projects. This aspect of the update will grow in importance as ERC's program becomes established.

The operational plan(s) ~~update~~ should also describe a limited number of high-need/high-benefit public interest RD&D areas in which efforts will be made to initiate new multi-year research projects. This aspect of the update will be especially important in the early years of ERC's operation. In addition to the input of the advisory and review committees, the development of new target areas should use public workshops and other means of obtaining stakeholder input. The process may also draw on the results of "scoping studies" that may be commissioned by ERC, and

on the results of investigator-initiated exploratory research projects. ~~funded through competitive ERC solicitations.~~

These ERC planning and updating processes should be designed for maximum simplicity and efficiency, minimum time and resource requirements, and result in strategic and operational plans that are responsive to changing conditions. The plans should be flexible and avoid fragmenting the program with small categories of funding allocations.

3. Establish ~~Project~~ Funding Guidelines and Mechanisms

Funding guidelines should require that all ~~projects~~ proposals be subject to a formal application and review process. Each ~~project~~ activity funded by the ERC should be ~~in response to a proposal submitted by the applicant and~~ evaluated based on the ~~project's~~ proposal's merit and ~~the project's~~ anticipated contribution to ERC's Mission and Objectives. All projects should be evaluated against the eligibility and evaluation criteria listed in Chapter III of this report, and any additional criteria that may be listed in the operational plan(s).

Proposals to the ERC may be either (a) unsolicited; or (b) in response to either an open or targeted competitive solicitation. Funding mechanisms for ERC projects should include both individual awards and block awards. Individual projects should be funded using contracts, grants or loans as the basis of these funding awards.

Block awards should be available for meritorious proposals submitted to ERC by other RD&D organizations. Proposals for all block awards should be evaluated based on eligibility and selection criteria. In addition, any projects subsequently funded by an RD&D organization receiving a block award should also be evaluated to ensure that these projects are consistent with the ERC's eligibility and selection criteria. Block awards could

take the form of either grants or contracts.

4. RD&D Activities - Most of ERC's actual RD&D activities should be funded through contracts, grants or loans to outside parties. ~~The ERC staff should be allowed to conduct RD&D activities only when it is clear that the staff possesses the necessary expertise and is the most effective means of completing the work in question.~~ However, this is not intended to exclude the ERC staff from participating in technology assessment and planning activities, or from personnel exchanges which would enhance the ERC's internal RD&D capabilities.

5. Leadership, Coordination and Collaboration With Other Public Interest Programs - In order to develop and maintain California's leadership in public interest RD&D, ERC should at a minimum:

a) seek to fully utilize all of California's RD&D resources;

b) seek to leverage and combine other state, federal, and private RD&D funds with ERC projects;

c) create formal coordination and collaboration arrangements with other public interest programs, including those administered by the CEC, CPUC, Energy Efficiency and the Renewables program administrators; and

d) coordinate activities with RD&D being conducted by ~~California~~ investor-owned and municipal utilities, ~~California~~ colleges and universities, national laboratories, private firms, and collaborative research organizations such as the Electric Power Research Institute or the Gas Research Institute.

6. Technical Management - The ERC should be responsible for plan updates, technology and market assessments, preparation of solicitations, review of proposals, project management, and coordination and guidance of the advisory and review committees.

7. Program Administration - In this function, the ERC will provide administrative activities such as contracting, hiring,

accounting, and similar services consistent with Objective #6 in Chapter II of this report. These administrative functions should be streamlined. ~~and kept at a minimum. In this function, the ERC will provide overall management and program review.~~

8. Program Evaluation - In order to maintain an effective and dynamic program that is responsive to the energy needs of California, it is important that the ERC update its strategic and operational plans, evaluate the effectiveness of its program, and look for new opportunities to improve its operation. At a minimum the ERC should:

- a) Conduct an annual, internal review of its program, including an annual update of the strategic and operational plans;
- b) Oversee a periodic, independent, external program review and evaluation process. The first evaluation should be completed no later than July 1, 2001;
- c) Develop qualitative and quantitative measures for determining how well the ERC is satisfying its Mission and Objectives. These measures of success should include program benefits, an open and flexible planning process, effective and efficient program implementation, public accountability, effective collaboration with RD&D infrastructure, program cost effectiveness, and a balanced portfolio of projects.

C. ADVISORY & REVIEW COMMITTEES

Two levels of advisory and review committees should be formed, each responsible for different functions of the ERC. This advisory group report does not specify the precise methods for selecting these committees, but that decision will need to be made by the ERC.

The first level should include a Policy Advisory and Review Committee which will be responsible for making recommendations on overall policy, coordination and linkages to other RD&D organizations, and evaluation of how well the program is meeting its Mission and Objectives. ~~market connectedness.~~ This committee would also be responsible for overseeing an independent review of

the ERC.

The second level should include a Technical Advisory and Review Committee which will be responsible for providing technical expertise in reviewing and evaluating proposals for new and ongoing projects, and in evaluating technology issues and needs.

Both advisory and review levels should have a flexible structure to allow for changing conditions. In addition, these committees should be able to form subcommittees or appoint special committees to address particular needs or issues as they may arise.

1. Policy Advisory and Review Committee - This should be a permanent committee composed of high-level executives or appointees, providing overall program policy recommendations, including focus area objectives, operational policies, funding priorities for focus areas, coordination with other RD&D organizations, and a yearly review and evaluation of the market connectedness of the ERC program. The annual review should be timed so that the results can be incorporated in the following year's plans and activities. The committee will prepare and submit a report of its findings and recommendations.

~~In addition, an external review committee should periodically conduct an independent evaluation of the ERC's process and programs and make recommendations on how the ERC could more effectively meet its Mission and Objectives. These outside experts should be selected based on their independence, unbiased technical expertise in some aspect of the ERC program, and their experience in working with or managing an RD&D program. To avoid any perceived conflicts of interest, individuals currently employed by the CEC, or by any other organization sitting on the policy advisory and review committee, or by an institution receiving ERC funds, should not be allowed to serve as one of these experts.~~

~~To facilitate participation on both the annual review panel and the external review committee, ERC should be willing to pay travel and other expenses related to these meetings for all participants.~~

2. Technical Advisory and Review Committee(s) - This should be an ad hoc committee or committees composed of energy RD&D managers or technical energy experts. These committees should be organized according to the ERC structure and provide specific program technical advice and recommendations on technology goals and targets, market need analysis, cross-cutting issues (e.g. coordination with the Energy Efficiency and Renewables programs), and funding options. These committees should be allowed to form subcommittees on an ad hoc basis to provide special advice and recommendations on such things as solicitations, proposed review and project selection, project technical assistance, contract management and termination, and technology peer reviews and need assessments.

~~Participation on these committees should be by invitation only. Travel and other expenses for these committees or subcommittees will only be covered under exceptional circumstances.~~

D. INDEPENDENT EVALUATION PROCESS

In addition, an independent, external review group should periodically conduct an evaluation of the ERC's process and programs and make recommendations on how the ERC could more effectively meet its Mission and Objectives. Members of this external review group should be selected based on their independence, unbiased technical expertise in some aspect(s) of the ERC program, and their experience in working with or managing an RD&D program. Members of this external review group should not have conflicts of interest with the ERC.

E. REMAINING "MILESTONES" TO COMMENCING ERC OPERATIONS

In order for the ERC to achieve the goal of having public interest RD&D activities under way by January 1, 1998, several remaining "milestones" must be dealt with before January 1, 1998. Listed below are the major remaining "milestones":

1.	CEC adopts the strategic plan	June 1997
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2.	Legislature adopts administrative and expenditure criteria	August 1997
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3.	ERC initiates implementation of the strategic plan, including development of the operational plan(s)	Sept. 1997
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4.	ERC initiates funding award process	Fall 1997
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APPENDIX A

ADVISORY GROUP PARTICIPANTS

Appendix A Advisory Group Participants⁵

Acurex Environmental	Institute for Environmental
ADM Associates	Mgmt., Inc.
Alzeta Corporation	Lawrence Livermore Nat. Lab
American Wind Energy Assoc.	Lawrence Berkeley National
Arkenol, Inc.	Lab
Bechtel Corporation	LCG Consulting/Energy
Biomass Alliance	Online
Boeing/Rocketdyne	Los Angeles Dept. of Water
CA Public Utilities	and Power
Commission staff	Los Alamos National
CA Inst. of Food & Ag.	Laboratory
Research	Modesto Irrigation District
Cal Rice Industries	National Renewables Energy
Association	Laboratory
California Energy	Natural Resources Defense
Commission staff	Council
California Institute for	MWB Sustainable
Energy Efficiency	New Charleston Power
California Energy Markets	Pacific Gas and Electric
California State	Company
University, Sacramento	Peninsula Energy Partners
California State	Plumas Corporation
University, San Diego	Power Wheel Corporation
City of Gridley	Roy & Associates
CLC	Royal Farms & Sharp Energy
Collaborative Advanced Gas	Inc
Turbines	Sacramento Municipal
Cytoculture International	Utility District
Davis Energy Group	Sacto. Metro. Air Quality
Electric Power Research	Mgt. District
Institute	San Diego Gas and Electric
Energy 2000	Company
Environsave Research &	Sandia National Labs
Training	Science Application
Exergy, Inc.	International Co.
FREI	Siemens Solar Industries
Fuel Cell Engineering	Solar Turbines
Corporation	South Coast Air Quality
Gas Research Institute	Mgt. District
Generation Equipment	Southern California Gas
Services Co.	Company
Geothermal Energy Assoc.	Southern California Edison
HFTA	Stewart & Stevenson

⁵ A representative participated in one or more of the advisory group meetings or California Energy Commission RD&D Committee hearings.

International
Trans-Pacific Geothermal
Corporation
TSS Consultants
Two-Phase Engineering and
Research
Union of Concerned
Scientists
United Solar Technologies
University of California,
Berkeley
University of California,
Davis
University of California,
Irvine
University of California,
President's Office
University of Southern
California
University of Utah/Energy
Geoscience Institute
Waste Energy Integrated
Systems
Weinberg Associates

Individuals:
Sarab Basrai
David Modisette

APPENDIX B

ADVISORY GROUP MEETING SUMMARIES

December 19, 1996

**SUMMARY OF THE AB 1890 RD&D ADVISORY GROUP'S
DECEMBER 17, 1996 WORKSHOP**

Listed below are the decisions that resulted from the December 17, 1996, AB 1890 RD&D advisory group workshop held at the California Energy Commission. If you have any questions or corrections, please contact Mike Batham (CEC) at (916) 654-4548 or fax at (916) 653-6010 by January 6, 1997.

Meeting Schedule: The next (second) workshop of this group will be held on January 7, 1997, at the University of California Berkeley Clark Kerr Campus, building 14, room 203, Berkeley, California. The third workshop will be held at the Sheraton San Diego Hotel and Marina, Terrace A and B, (address to be added) (near the San Diego Airport with complementary shuttle available. Notices of these and any other workshops will be mailed to everyone on the Energy Commission's Docket Number 96-RDD-1890 mailing list and posted on the Energy Commission's web site (Access Energy) at:
http://www.energy.ca.gov/restructuring/AB1890_research

Group Planning Process: After introductions and a brief summary of the December 2 hearing, the group decided that we would strive to reach consensus (defined as a conclusion that we can all live with, i.e., all parties either agree or abstain). When consensus can not be reached the group will present options with their respective "pros" and "cons". When determining if the group has consensus, if voting or polling is necessary, only one vote per organization will be allowed.

The initial priority of the group will be to draft administrative and expenditure criteria, including related foundation items that should be included in the Public Interest RD&D Plan. Following this, the group will focus on developing the contents of the draft plan. At a minimum the plan should include strategic elements such as administrative and expenditure criteria, a mission statement, goals, and program categories (including objectives and descriptions). As time permits more detail will be added to the plan such as administrative guidelines.

The group also decided that we would use the internet when possible to send interim draft products to the

writing committee and/or active group members for review. Complete or final draft products would be posted on the Energy Commission's web site (address shown above). Meeting notices and final products will also be mailed to everyone on the Energy Commission's mailing list identified above.

Administrative and Expenditure Criteria: After a lengthy discussion, the group decided to develop a recommended mission statement, goals, and a discussion piece on administrative and expenditure criteria for the next workshop. The September 6, 1996, RD&D Working Group report to the CPUC should be used as a starting point for this work. It was further decided that a "holiday writing committee" would be formed to prepare an initial draft of the mission statement and goals. This committee would also be prepared to lead a discussion at our next workshop on draft administrative and expenditure criteria. The staff of the Energy Commission said they would set up a conference call for Friday at 10 a.m. to facilitate this work. Staff will also send the e-mail addresses and fax phone numbers of the writing committee members to all members on the committee. The people that volunteered to participate on this committee are: Tod O'Connor (SCE), Sheryl Carter (NRDC), Betsy Krieg (PG&E), Max Sherman (LBL), Kevin Craig (NREL), David Berokoff (SCG), Carl Blumstein (UC), Richard Brent (Solar Turbines), Al Pak (EPRI), Mary Johannis (CEC), Jane Turnbull (PEP), and Mike Smith (CEC). Max Sherman is lead for the mission statement, Betsy Krieg is lead for the goals, and Carl Blumstein is the lead for the discussion of administrative and expenditure criteria.

Next Workshop: The focus of the January 7, 1997 workshop will be to discuss: the draft mission statement and draft goals, to be prepared by the writing committee; draft administrative and expenditure criteria, to be led by Carl Blumstein; the definition of terms, to be prepared by Kurt Kammerer; the draft strategic plan outline, to be prepared by Energy Commission staff; and a revised meeting schedule with key dates and decision points, to be prepared by Energy Commission staff. Energy Commission staff will also prepare a list of the phone numbers and e-mail addresses of all the participants in this workshop.

Mailed to docket list number 96-RDD-1980 and placed on the Energy Commission's web site on December 23, 1996.

13, 1997

January

**SUMMARY OF THE AB 1890 RD&D ADVISORY GROUP'S
JANUARY 7, 1997, WORKSHOP**

Listed below are the decisions that resulted from the January 7, 1997, AB 1890 RD&D advisory group workshop held at the University of California, Berkeley, Clark Kerr Campus. If you have any questions or corrections, please contact Mike Batham at (916) 654-4548, or fax (916) 653-6010, or e-mail mbatham@energy.state.ca.us by January 22, 1997.

Meeting Schedule: The next (third) workshop of this group will be held on January 21, 1997, at the Sheraton San Diego Hotel and Marina, Terrace A and B, 1380 Harbor Island Drive, San Diego, CA (near the San Diego Airport with complementary shuttle available). The notice for this workshop was mailed on December 23, 1996.

The following two workshops are being scheduled for Sacramento on February 10, 1997, and Oakland (later changed to San Francisco) on February 27, 1997. Notices of these two and any other future workshops and hearings will be mailed to everyone on the California Energy Commission's (Commission) Docket Number 96-RDD-1890 mailing list (number 62) and posted on the Commission's web site (Access Energy) at:
http://www.energy.ca.gov/restructuring/AB1890_research

Summary of the December 17, 1996, Workshop: The group agreed that the draft summary of the December 17, 1996, workshop dated December 19, 1996, accurately reflected the group decisions from that workshop.

Definition of terms: The group agreed to the following definitions prepared by Kurt Kammerer:
"**Mission:** A broad-reaching, general statement that provides guidance for the development of goals and objectives. Often characterized as "where you want to go" or "what you want to be." **Objective:** A statement of intent that leads to the attainment of the mission, but is not necessarily focused nor measurable. **Goal:** A discrete, focused and measurable statement of intent. Emphasis is on discrete and measurable. Goals should have a time-frame and a specific end result, or deliverable. **Guiding Principles:** A statement that provides for the cause, nature, motivation or environment surrounding the organization or process." The group will use these definitions in future workshops and documents. Kurt also presented definitions of other

terms, but the group decided that since we were not using these terms at the present time, any consideration of these additional terms would be postponed.

Mission Statement: The group essentially agreed (with two issues outstanding) to the following mission statement: "The mission of Energy Research California is to conduct public interest energy research concerning products and services that will improve the quality of life for California's citizens by providing clean, safe, reliable and affordable energy. Public interest energy research includes the full range of research, development, and demonstration activities that will advance science or technology not adequately provided by competitive and regulated markets." The first outstanding issue in this statement is whether the more narrow term "electricity" or "electricity systems" should be substituted for "energy". The second issue is should the words "concerning products and services" be deleted from the statement since some members felt that these words could unnecessarily restrict the program.

Objectives: The group decided that the draft goals should be modified and, based on the approved definitions of terms, re-labeled as objectives. Specifically, the first goal (now objective) prepared by the holiday writing team should be replaced with the compromise language presented by Sheryl Carter i.e. "Developing a robust public-interest RD&D portfolio that addresses California's energy needs in the areas of renewable energy generation, end-use efficiency, environmental protection, and other activities meeting eligibility and selection criteria." The group agreed with the first part of this objective (through the words "energy needs"). The majority of the group also agreed with the second part of this objective. Some group members, however, felt that "end-use efficiency" in the second part of the objective was too restrictive and the term "energy efficiency" should be used instead. Since the group could not agree on this point, some members, including Hank Leibowitz, Don Glenn, Steve Vosen, and Robert Poitras, agreed to prepare optional language to be included in the report for consideration by Commissioners.

The group also discussed the other goals (now objectives) prepared by the holiday writing team and decided that with the group's discussion as direction, a new writing team (the mission/objectives/A&E writing team) will re-draft the objectives. Specific statements that should be included as part of the re-drafted objectives include: the program should be consistent with state energy policy, the program should balance risk and time frame, the program needs a connection to

the marketplace, the program needs to strengthen the state's knowledge base, and the program should provide leadership for state energy research via collaboration, partnerships, etc. The holiday writing team's draft criteria should be re-labeled as guiding principles and re-drafted to be consistent with the mission statement and objectives.

The new mission/objectives/A&E writing team includes: Betsy Krieg, David Abelson, Max Sherman, Jane Turnbull, Mike Smith, Katie McCormack, Mary Johannis, Carl Weinberg, Sheryl Carter, David Berokoff, Kurt Kammerer, Mike DeAngelis, and Carl Blumstein. The Commission staff will prepare a draft for this writing team to discuss during a conference telephone call scheduled for Tuesday, January 14, starting at 10:00 am. The staff will e-mail or fax this new draft and conference telephone number to the new writing team on Friday, January 10, 1997. A second conference call is scheduled for Thursday at 10 am in case the new writing team needs additional time to reach closure on this subject. Following the conference telephone call(s), the Commission staff will place the mission/objectives/A&E writing team's revised mission statement, objectives, and guiding principles on the Commission's web site by January 17, 1997, for full group review prior to the next workshop. These items will be discussed and finalized at the January 21, 1997, workshop and then transmitted to the Commission as suggested Administrative and Expenditure Criteria for Commission consideration and submission to the Legislature. Finally, another conference call will be scheduled on Tuesday, January 14, starting at 2:00 pm for those members of the writing team who would like to discuss options for addressing administrative and expenditure criteria options outlined by Carl Blumstein at the January 7 workshop.

Strategic Plan Outline: Several modifications were made to the strategic plan outline, including: "goals" should be changed to "objectives", "criteria" should be changed to "guidelines", a section II.C. "Guiding Principles" should be added, a section III.D. "Project Selection Guidelines" should be added at a general level, a general discussion on "Funding Mechanisms" should be added to section IV.D., a "Summary" of section (IV.E. Program Evaluation and Planning) should be added, and a new section V. "Recommendations" should be added. The group also added a new section IV.E.2. e. "cost effectiveness" to the Operational Plan Outline. It was agreed that the group may suggest additional changes to both outlines as work proceeds on developing the details of the plan. The revised Strategic Plan Outline, this draft summary, and an agenda for the January 21,

workshop will be placed on the Commission's web site by January 17, 1997.

Next Workshop: The focus of the January 21, 1997, workshop will be: 1) to finalize the draft mission statement, objectives, and guiding principles as administrative and expenditure criteria recommendations; 2) finalize the draft strategic plan outline; 3) begin a discussion of Chapter III, Program Categories; 4) discuss the contents of a letter which will summarize the progress of the group and transmit the items listed in 1 and 2 above to the Commission; and 5) discuss how the group plans to present information, including the items above, at the RD&D Committee hearing on February 5, 1997, in Sacramento.

Kurt Kammerer told the group that anyone planning on having lunch on site during the January 21 workshop, needs to call either Kurt at (619) 696-1841 or Mike Batham at

(916) 654-4548 by Wednesday, January 15, 1997, and make reservations. The cost for this lunch is \$20.

Placed on the Commission's web site and mailed to list number 62 on January 17, 1997.

6, 1997

February

**SUMMARY OF THE AB 1890 RD&D ADVISORY GROUP'S
JANUARY 21, 1997, WORKSHOP**

Listed below are the decisions that resulted from the January 21, 1997, AB 1890 RD&D Advisory Group workshop held at the Sheraton San Diego Hotel and Marina in San Diego. If you have any questions or corrections to this summary, please contact Mike Batham at (916) 654-4548, or fax (916) 653-6010, or e-mail mbatham@energy.state.ca.us by February 11, 1997.

Meeting Schedule: The next (fourth) workshop of this group will be held on February 10, 1997, at the Sacramento Municipal Utility District Headquarters, Rubicon Room, 6301 S Street, Sacramento, CA. The fifth workshop will be held on February 27, 1997, at PG&E's Pacific Energy Center, 851 Howard Street, San Francisco, CA. The notice for these workshops was mailed on January 17, 1997. Notices of future workshops and hearings will be mailed to everyone on the California Energy Commission's (Commission) Docket Number 96-RDD-1890 mailing list (number 62) and posted on the Commission's web site (Access Energy) at: http://www.energy.ca.gov/restructuring/AB1890_research

Summary of the January 7, 1997, Workshop: The group agreed that the draft summary of the January 7, 1997, workshop dated January 13, 1997, accurately reflected the group decisions from that workshop.

Mission Statement and Objectives: The group agreed that, with modifications, the revised Mission Statement and Objectives should be submitted to the Energy Commission's RD&D Committee before February 1, 1997 (a copy of the revised text is attached). The modifications that the group agreed to are: a second paragraph should be added to the preface explaining that the Mission Statement and Objectives should be considered as an integrated set of policies; Objective 1D (as modified) will become Objective 1; Objective 2 is approved; Objective 4 will have three options; relabel the Guiding Principals to become Objectives; make Objective 3c a separate Objective; in old Guiding Principal 2, change "solicitation and project" to "project acquisition and", also change "minimizing" to "avoid excess"; and move Guiding Principal 3b to Guiding Principal 2.

Administration and Expenditure Criteria: The

group agreed, with a few modifications, to the draft letter for transmitting the Mission Statement and Objectives to the RD&D Committee (copy attached). The group also agreed that the final Administration and Expenditure Criteria to be adopted by the Legislature may need additional information beyond the revised Mission Statement and Objectives. An example of one possible addition would be information on contract streamlining.

Staff will make the agreed revisions to the transmittal letter, the Mission Statement and Objectives and post these on the Internet on January 24, 1997, for final group review and sign-on. The final document will be submitted to the RD&D Committee on February 1, 1997.

Strategic Plan Outline: Several modifications were made to the strategic plan outline, including: electricity should fit in the eligibility criteria; change III D 7 to "Small Business and Other Considerations"; and under item 4 B 5 "Coordination With" add "Municipal RD&D Programs".

Chapter III: After a discussion on program categories, it was agreed that members with comments should e-mail their comments to Mike Batham by COB Friday January 24, 1997. The Commission staff will then prepare a draft set of program categories to be discussed during a Monday February 3, 1997, conference telephone call starting at 10 am. Staff will make the arrangements for the conference call and post the draft program categories on the Internet by Wednesday January 29, 1997. Members that plan on participating in the conference call are: Carl Weinberg, Sharon Shoemaker, Bill Nadauld, Ed Keffer, Dave Abelson, Don Glenn, Jane Turnbull, Theo Tsotsis, Keven Craig, Katie McCormack, Steve Vosen, Mike Wright, Lena Ford, Todd O'Conner, Max Sherman, Betsy Krieg, Al Pak, and Mary Johannis.

February 5, 1997 RD&D Hearing: For the February 5, 1997 RD&D Committee Hearing, the group agreed that Commission staff should present a summary of: the AB 1890 RD&D Advisory Group process, Mission Statement and Objectives, current issues, and schedule. Following the staff presentation, individuals that wanted to would make presentations summarizing their positions. Lastly, anyone from the public would have the opportunity to present their views.

Next Workshop: The focus of the February 10, 1997, workshop will be: 1) to finalize the outline and content of Chapter III, program categories, including program objectives, project eligibility guidelines, and project selection guidelines; and 2) to discuss a preliminary

outline of Chapter IV, Administration of Energy Research
California.

Attachments

Placed on the Commission's web site on February 7, 1997.

February

18, 1997

**SUMMARY OF THE AB 1890 RD&D ADVISORY GROUP'S
February 10, 1997, WORKSHOP**

Listed below are the decisions that resulted from the February 10, 1997, AB 1890 RD&D Advisory Group workshop held at the Sacramento Municipal Utility District headquarters in Sacramento. If you have any questions or corrections to this summary please contact Mike Batham at (916) 654-4548, or fax (916) 653-6010, or e-mail mbatham@energy.state.ca.us by February 27, 1997.

Meeting Schedule: The next (fifth) workshop of this group will be held on February 27, 1997, at PG&E's Pacific Energy Center, 851 Howard Street, San Francisco. The following two workshops are tentatively scheduled for March 13 and March 24. The R&D Committee hearing, tentatively scheduled for February 26, will be postponed until probably March. Notices of these future workshops and hearings will be mailed to everyone on the California Energy Commission's Docket Number 96-RDD-1890 mailing list (number 62) and posted on the Commission's web site (Access Energy) at:

http://www.energy.ca.gov/restructuring/AB1890_research

Summary of the January 21, 1997, Workshop: Since the group did not have adequate time to review the summary of the January 21, 1997 workshop, it was agreed that anyone that had comments on the draft summary would send their comments to Mike Batham by Friday, February 14, 1997. Staff would then finalize the summary.

Chapter III: The group agreed not to define renewable technologies in this report but decided to have staff coordinate the AB 1890 Renewable Technologies Program definition with either the language in Chapter III A. ERC Categories and Objectives, or Chapter IV. The group also agreed that the staff should add language in section A indicating that the focus areas should add synergism but not be redundant with other programs.

The group also agreed to the following wording changes: with a few exceptions, listed below, replace all the words "program" with "focus"; in the title of section A, change "PROGRAM" to "ERC"; in section A first sentence, change the second "programs" to "categories"; in section A. 2) first bullet, delete the words "or reduce the energy use"; also in section A. 2) add a new second bullet, "Develop and/or demonstrate technologies and

processes that would reduce the energy use of products and services."; change the first bullet in section A. 3) to read "Develop and/or demonstrate technologies and processes for reducing or preventing environmental impacts and related costs of energy production, delivery and use"; change the title of section A. 4) to read "Strategic Energy Research Focus Areas and Objectives"; change the first bullet in section A. 4) to read "Develop and/or demonstrate innovative concepts in energy technologies and related information services that are cross-cutting or do not fall into other focus areas"; rewrite the third bullet in section A. 4) to read "Support the integration of new technologies or process into California's energy system"; and add a new second bullet for Eligibility Guidelines in section B to read "Is consistent with ERC mission and objectives".

The group agreed that the staff should consolidate the 12 Selection Guidelines bullets in section B into approximately five more strategic and less operational bullets. Contained in the revised Selection Guidelines bullets should be a discussion of "customer/market benefits", "risk" and "timeframe". The Selection Guidelines should be tied to the Objectives, e.g. degree of advancement of the Objectives.

The group agreed that staff should rewrite section C. SELECTION PROCESS to indicate that flexibility will be used for evaluating proposals, block grants, continuing projects, open vs. Request For Proposals solicitations etc. Staff should add the words "per category" after the word "percentages" on the first line in paragraph two.

Max Sherman said he would also draft alternate language for a review/selection process by Friday, February 14, for group review.

Staff will post on the Internet on Tuesday, February 25, the draft revisions to Chapter III along with the drafts of Chapters I and II.

Chapter IV: The group agreed that staff should make the following changes to the draft Chapter IV outline: add to section A, a discussion similar to that contained in section B. 6) (this same discussion may also be appropriate to be included in Chapters I or II); change section B. 3) (b) 2) c) to read "loans and other mechanisms"; and add language that block grants are an appropriate funding mechanism. The group also agreed that anyone that had specific comments or revisions to the Chapter IV outline would fax or e-mail them to Mike Batham by noon on Friday, February 14. Staff will then revise and post the revised Chapter IV outline on the

Internet on Tuesday, February 18. Adding content to the revised outline will be the subject of a telephone conference call on Thursday, February 20, at 10 am. Based on this conference call staff will expand the text of the outline and post the product on the Internet on Monday, February 24.

Next Workshop: The focus of the February 27, 1997 workshop, will be: 1) to finalize the draft texts of Chapters I, II, and III; 2) to discuss the expanded Chapter IV outline and agree on the content for this Chapter; and 3) to discuss the content or need for Chapter V.

Placed on the Commission's web site on February 25, 1997.

1997

March 10,

**SUMMARY OF THE AB 1890 RD&D ADVISORY GROUP'S
FEBRUARY 27, 1997, WORKSHOP**

Listed below are the decisions that resulted from the February 27, 1997, AB 1890 RD&D Advisory Group workshop held at the PG&E's Pacific Energy Center in San Francisco. If you have any questions or corrections to this summary please contact Mike Batham at (916) 654-4548, or fax (916) 653-6010, or e-mail mbatham@energy.state.ca.us by March 14, 1997.

Meeting Schedule: The next (sixth) workshop of this group will be held on March 13, 1997, at the Sacramento Municipal Utility District, Customer Service Center, 6301 S Street, Timberline Rooms 2&3, Sacramento, CA. The following, possible last, workshop is scheduled for March 24 at the Red Lyon Hotel in Ontario, CA. When the R&D Committee hearing(s) is/are scheduled a notice will be mailed to everyone on the California Energy Commission's Docket Number 96-RDD-1890 mailing list (number 62) and posted on the Commission's web site (Access Energy) at:
http://www.energy.ca.gov/restructuring/AB1890_research

Summary of the February 10, 1997, Workshop: The group agreed that the draft summary of the February 10 workshop was accurate.

Chapter III: There was considerable discussion about the content and editing of Chapter III. The main areas of discussion were primarily focussed on the need to: consolidate some of the text; discuss the "end-use energy efficiency" vs "energy efficiency" issue in Chapter II; relist the focus areas to include three options for the existing "energy efficiency" focus area (e.g. "end-use energy efficiency", "end-use energy efficiency and environmentally preferred advanced generation", and "environmentally preferred advanced generation"; restate the environmental focus area text; eliminate the "strategic energy research focus area" as a focus area and place this subject in the beginning of the chapter as a general discussion; and eliminate the reference to the Energy Technology Status Report matrix. There were also many minor editing changes.

The group agreed that a telephone call would be scheduled for Thursday March 6 at 2 pm. Prior to this call staff would incorporate into the draft text the

results of this workshop and any additional comments that members of the group would send by COB on Friday, February 28. Staff would then e-mail the revised text to the members of the writing team for discussion during the conference call. The results from this conference call would be incorporated into the draft text and put on the Energy Commission's web page on Tuesday March 11. This revised text would be the subject of the groups' next workshop on March 13.

Chapter IV: Very little time was spent discussing Chapter IV. The group decided that Chapter IV would be the main subject of the next workshop. This chapter would also be discussed, if possible, during the March 6 telephone conference call.

Next Workshop: The focus of the March 13, 1997 workshop, will be: 1) to finalize the content of draft Chapter IV; and 2) finalize major edits of Chapters I, II, and III.

Placed on the Commission's web site on March 11, 1997.

1997

March 17,

**DRAFT SUMMARY OF THE AB 1890 RD&D ADVISORY
GROUP'S
MARCH 13, 1997, WORKSHOP**

Listed below are the decisions that resulted from the March 13, 1997, AB 1890 RD&D Advisory Group workshop held at the Sacramento Municipal Utility District, Customer Service Center in Sacramento. If you have any questions or corrections to this summary please contact Mike Batham at (916) 654-4548, or fax (916) 653-6010, or e-mail mbatham@energy.state.ca.us by March 24, 1997.

Meeting Schedule: The next (seventh and probably last) workshop of this group will be held on March 24, 1997, at the Ontario Airport Red Lion Hotel, 222 North Vineyard Road, Ontario. The next RD&D Committee hearing is tentatively scheduled for April 17, 1997. Notices of this Committee and future Energy Commission hearings on this subject will be mailed to everyone on the California Energy Commission's Docket Number 96-RDD-1890 mailing list (number 62) and posted on the Commission's web site (Access Energy) at:
http://www.energy.ca.gov/restructuring/AB1890_research

Summary of the February 27, 1997, Workshop: The draft summary of the February 27, 1997 workshop was adopted by the group.

Chapter IV: The group had an extensive discussion on Chapter IV (Governance). Most of this discussion dealt with several minor changes and edits. There were however two content changes including: first, adding a new a) section in paragraph 5) indicating that the ERC should fully utilize California's RD&D resources; and second, moving the external review discussion out of section C. Advisory & Review Committees, and making a new section D. Independent Evaluation.

Chapters I, II, and III: In addition to agreeing to several minor changes and edits, the group agreed that two appendices should be added to the report. Appendix 1 will list the organizations and individuals that participated in the Advisory Group process. Appendix 2 will list the summaries of the Advisory Group workshops.

Submitting The Final Report: The group agreed that staff would make the changes to the draft report and post the revised Final Draft Strategic Plan Report, along with a draft transmittal letter, on the Internet on Thursday March 20, 1997. This final draft and

transmittal letter will then be discussed at the group's last workshop on March 24, in Ontario. Staff will incorporate any final edits to the report and post the "Final" report on the Internet on Thursday March 26. Individuals will have until noon on Monday March 31 to indicate if that they want their names taken off the list of report supporters. The final Strategic Plan Report will be delivered to the RD&D Committee on the afternoon of March 31, 1997. Staff will also fax a letter explaining this process to each organization in case they were unable to attend the last two workshops.

Next Workshop: The focus of the March 23, 1997 workshop, will be to complete the final minor edits to the Strategic Plan Report and transmittal letter.

Placed on the Commission's web site on March 20, 1997.

March 25, 1997

**DRAFT SUMMARY OF THE AB 1890 RD&D ADVISORY
GROUP'S
MARCH 24, 1997, WORKSHOP**

Listed below are the decisions that resulted from the March 24, 1997, AB 1890 RD&D Advisory Group workshop held at the Red Lion Hotel in Ontario. If you have any questions or corrections to this summary please contact Mike Batham at (916) 654-4548, or fax (916) 653-6010, or e-mail mbatham@energy.state.ca.us by **noon, March 31, 1997.**

Meeting Schedule: The next RD&D Committee hearing is tentatively scheduled for April 17, 1997. Notices of this Committee and future Energy Commission hearings on this subject will be mailed to everyone on the California Energy Commission's Docket Number 96-RDD-1890 mailing list (number 62) and posted on the Commission's web site (Access Energy) at:

http://www.energy.ca.gov/restructuring/AB1890_research

Summary of the February 13, 1997, Workshop: The draft summary of the March 13, 1997 workshop was adopted by the group.

**ADDITIONAL DETAILS TO BE ADDED FOLLOWING THE
MARCH 24 WORKSHOP**